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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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Federal Communications Commission
Office of Secretary

In the Matter of

The Development of Operational,
Technical, and Spectrum Requirements
for Meeting Federal, State, and Local
Public Safety Agency Communication
Requirements Through the Year 2010

WT Docket No. 96-86

REPLY COMMENTS OF MOTOROLA

MOTOROLA

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SUMMARY

The record in this proceeding provides compelling justification for promptly implementing all of the key recommendations in the Public Safety Wireless Advisory Committee's *Final Report*. In its reply comments, Motorola discusses, in particular, the widespread support for expeditiously allocating spectrum to meet the communications requirements of public safety agencies. As argued strongly in the record, to avoid exacerbating existing life-threatening shortfalls of spectrum, the Commission should immediately adopt the PSWAC's recommendations to allocate 2.5 MHz for interoperability, 25 MHz in the short term for data and voice communications, and up to an additional 70 MHz by 2010. Motorola emphasizes, however, that spectrum allocations alone will not alleviate the current public safety communications crisis, and, like other commenters, believes it is imperative for the Commission to act on the comprehensive set of key proposals advocated in the PSWAC *Final Report*.

The record developed in this proceeding also demonstrates that the Project 25 standards for public safety digital technologies were the result of an open, inclusive process and that the standard has already enhanced competition in the public safety communications equipment market. A review of the comments shows that Project 25 was driven by user concerns and is fully supported by the user community. As such, Project 25 is an example of cooperation, without government intervention, to resolve industry challenges in a publicly beneficial manner. In such respects, the standard has also already resulted in increased competition in the public safety equipment market with the entry of new product vendors. Many of these companies, in fact, attribute their entry into this market solely to the existence of Project 25, which provides for compatibility between multiple equipment vendors and increases the choices available to the users.

Under these circumstances, Motorola and others strongly believe the Commission should encourage the continuation of such efforts, rather than considering imposing inappropriate statutory or regulatory constraints on the flexibility of such organizations to achieve consensus. As the user community observes, the ultimate determination of the success of a standards effort is whether the result achieved meets the needs of those who desired the standard. In the case of Project 25, it is clear both that the effort was successful and that the benefits achieved were gained through open and inclusive processes. There is no basis whatsoever for extending a statutory provision, which was clearly intended to address a situation that does not exist in the public safety communications market, beyond its literal terms to encompass voluntary efforts by users to meet their own needs.

As a final matter, Motorola's reply comments also briefly address suggestions by Ericsson to adopt simplistic "carrot" and "stick" regulations to "encourage" use of "more spectrally efficient" technology. Specifically, Ericsson's advocacy of a 6.25 kHz voice channel equivalence mandate -- a full 6 years before such measures are even considered for commercial counterparts -- is directly contrary to the policies adopted in the *Refarming* proceeding. Moreover, Ericsson's proposal to encourage trunked systems by relegating conventional users to secondary status cannot be justified technically as an efficiency enhancement and utterly fails to recognize the legitimate functional needs of public safety users. Motorola urges the Commission instead to continue its existing spectrum efficiency policies while continuing to afford public safety agencies the needed discretion to make technology and system selection choices tailored to their local needs and budgets.

In sum, the record in this proceeding reveals a clearly defined course that the Commission must pursue if it is to avert a public safety communications crisis. Motorola urges the Commission to act expeditiously and decisively to allocate 2.5 MHz for interoperability, provide 25 MHz of new spectrum for short term voice and data needs, and to set aside an additional 70 MHz of new spectrum for future public safety needs. Motorola also urges the Commission to encourage

cooperative industry efforts like Project 25 and to affirm its tentative decision not to extend unnecessary regulations to private, voluntary standards efforts. Motorola further urges the Commission to reject expensive, impractical, and questionable efforts to accelerate equipment replacement by Ericsson and instead to continue policies allowing public safety agencies the autonomy to select systems with functional capabilities meeting their local needs.

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REPLY COMMENTS OF MOTOROLA

Motorola hereby submits its reply to the comments filed in response to the Commission's Notice of Proposed Rule Making in the above-captioned proceeding.¹ As discussed below, the opening comments reflect widespread support for prompt implementation of the recommendations advanced in the *Final Report* issued by the Public Safety Wireless Advisory Committee ("PSWAC"), underscoring in particular the acute need for immediate allocation of additional spectrum to meet the communications requirements of the public safety community. There is also broad agreement among commenters, including public safety users and equipment manufacturers, that the Project 25 interoperability standard was developed through an open, inclusive process, and that implementation of the standard will have a significant beneficial impact on the effectiveness of public safety operations and the level of competition in the market for public safety communications equipment.

¹ The Development of Operational, Technical, and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, 11 FCC Rcd 12460 (1996).

I. THE RECORD EMPHASIZES THE NEED TO ADOPT PSWAC'S KEY RECOMMENDATIONS FOR ALLEVIATING PUBLIC SAFETY SPECTRUM SHORTFALLS

The PSWAC *Final Report* documents the shortage of spectrum available to public safety communications users across the country and recommends that the Commission immediately allocate spectrum to meet the short-term and long-term needs of the public safety community. In its opening comments, Motorola offered its strong support of the PSWAC *Final Report* conclusions. The commenters have agreed that allocations of additional spectrum are vital to the missions of public safety agencies. Commenters thus urge the Commission to implement immediately the key recommendations in the PSWAC *Final Report*.²

Specifically, the PSWAC *Final Report* recommends immediate allocation of 2.5 MHz of spectrum for interoperability purposes, an additional allocation of 25 MHz within five years, and development of a comprehensive plan and commitment to provide an additional 70 MHz of spectrum for public safety use in the 5-15 year time frame. The Spectrum Requirements Subcommittee Report supports this recommendation with a detailed quantitative evaluation of the public safety community's spectrum needs. As discussed below, numerous commenters, including Motorola, voiced strong support for making the implementation of these spectrum

² See, e.g., Comments of the California Public Safety Radio Association at 3-4; Comments of the County of Los Angeles at 2-3; Comments of Quantum Radionics Corporation at 5-9; Comments of South Bay Regional Public Communications Authority at 7; Comments of the City of Fort Worth, Texas at 9; Comments of the Northern California Chapter of the Association of Public Safety Communications Officials at 17; Comments of the City of Richardson, Texas at 1; Comments of E.F. Johnson Company at 2; Comments of the New York State Police at 1; Comments of the County of Prince William, Virginia at 3.

allocation proposals a top priority.³ As noted by Los Angeles County, "[a]ny delay [in assigning additional spectrum] only contributes to the life-threatening impact that the existing spectrum shortfall presents."⁴

A. The Record Supports PSWAC's Recommendation that 2.5 MHz of Spectrum Be Set Aside Immediately for Interoperability

The comments reflect strong support for the PSWAC *Final Report's* recommendation that the Commission immediately allocate "2.5 MHz of spectrum for interoperability in the VHF and UHF bands between 138 MHz and 512 MHz."⁵ Most commenters agree that, to be effective, this allocation must be for unbroken spectrum contiguous to either the VHF or UHF land mobile allocations.⁶ Furthermore, as explained in detail by the City of Mesa, Arizona, an allocation below 100 MHz should not be considered an option because commercial equipment is not available and noise and skip problems impede effective communications. Similarly, many public safety systems are not operating in higher frequency bands for economic or technical reasons so their utility for interoperability becomes less attractive.⁷ In contrast, spectrum between 138 and 512 MHz -- and in particular, spectrum in the 138-144 MHz, 174-180 MHz, or 470-512 MHz bands -- is

³ See, e.g., Comments of the California Department of General Services, Telecommunications Division at 3; Comments of Ericsson, Inc. at 3, 5, 29 (stating "unless immediate measures are taken to alleviate spectrum shortfalls and promote interoperability, Public Safety agencies will not be able to adequately discharge their obligation to protect life and property in a safe, efficient, and cost effective manner") (quoting the PSWAC *Final Report* at 2).; Comments of the National League of Cities at 6.

⁴ Comments of the County of Los Angeles at 2.

⁵ Public Safety Wireless Advisory Committee, Final Report, at 21 (Sept. 11, 1996). See also, e.g., Comments of the California Department of General Services, Telecommunications Division, at 8; Comments of the National League of Cities, at 6; Comments of the New York State Police, at 1; Comments of the City of Mesa, Arizona, at 6.

⁶ See Comments of the City of Mesa, Arizona at 6; Comments of John S. Powell at 11-12; Comments of the California Department of General Services, Telecommunications Division at 8; Comments of the National Association of State Telecommunications Directors at 6; Comments of the National League of Cities at 6; Comments of the Federal Law Enforcement Wireless Users Group at 12, 18.

⁷ See Comments of the City of Mesa, Arizona at 6.

technically capable of meeting the needs of public safety users and is immediately accessible by most public safety entities.⁸

B. The Record Supports PSWAC's Recommendation that An Additional 25 MHz of Spectrum Be Set Aside Within the Next Five Years For Public Safety Use, and that an Additional 70 MHz Be Set Aside For Public Safety Operations Over the Next 15 Years

The record also contains widespread support for the PSWAC *Final Report's* recommendation that, "in the short term, voice and data operations require approximately 25 MHz of new Public Safety allocations" and that, "[b]y the year 2010, as much as an additional 70 MHz may be needed for these applications."⁹ The commenters generally agree that the projections set forth in the PSWAC *Final Report* represent an accurate and fair depiction of the public safety community's immediate and longer term spectrum needs because they were based on detailed models that took into account advances in technology and the utility of commercial services.¹⁰ Accordingly, the commenters generally endorse PSWAC's request that the Commission immediately allocate 25 MHz of spectrum for public safety use and that an additional 70 MHz be allocated by 2010.¹¹ Consistent with PSWAC's recommendations, the vast majority of commenters stress that, in making these allocations, the Commission must endeavor "to seek out

⁸ See Comments of John S. Powell at 11. See also Comments of the City of Mesa, Arizona at 6 ("A nationwide interoperability band needs to be between 100 and 500 MHz. Mesa believes that the ideal allocation would be either in the 138-144 MHz or 174-180 MHz band.").

⁹ Public Safety Wireless Advisory Committee, Final Report at 21 (Sept. 11, 1996).

¹⁰ See Comments of the Association of Public Safety Communications Officials International, Inc. ("APCO International") at 19; Comments of the National Association of State Telecommunications Directors ("NASTD") at 14.

¹¹ See, e.g., Comments of John S. Powell at 18; Comments of NASTD at 14; Comments of the N.Y. State Police at 1; Comments of APCO International at 18-19.

as much contiguous spectrum . . . as possible," and to "find spectrum that is adjacent to that now being used" by public safety entities.¹² Motorola agrees with these suggestions.

In MM docket No. 87-268, Motorola recently filed comments urging the Commission to make technical allotment decisions in its digital television proceeding to facilitate the reallocation of UHF-TV channels 60-69.¹³ Motorola informed the FCC that it "cannot identify any alternative spectrum" that would better meet the near term needs of the public safety community than that now occupied by UHF-TV channels 60-69. Along with many of the other commenters, Motorola urges the FCC to pursue this spectrum opportunity as a near term solution for public safety.

¹² Comments of NASTD at 14; *see also* Comments of APCO International at 20-22 (urging the FCC to allocate UHF channels 60-69, which are adjacent to the 800 MHz frequency bands used by many public safety entities, to public safety and to provide public safety users access to additional spectrum in the VHF/UHF bands); Comments of the California Department of General Services, Telecommunications Division at 17-18 (urging an allocation of spectrum in the 138-216 MHz and 400-512 MHz bands); Comments of the County of Los Angeles at 5 (supporting reallocation of UHF channels 60-69 and the 380-399.9 MHz and 138-144 MHz bands for public safety use); Comments of the County of Orange, California at 3-4 (supports allocation of UHF channels 60-69 for public safety use, and also suggests reallocation of the 800 MHz "General Access Pool," TV channels 7-13, and 380-400 MHz); Comments of Ericsson, Inc. at 29 (supports making some of UHF TV channels 60-69 available for public safety use as soon as possible); Comments of the National League of Cities at 6 (urging the FCC to make spectrum currently used for television broadcast channels 60-69 available for public safety); Comments of Quantum Radionics Corporation at 7-9 (supports contiguous spectrum allocations in the VHF High Band between 174 MHz and 216 MHz, but suggests that this allocation is not enough); Comments of the American Association of State Highway and Transportation Officials at 15 (any new allocations should be adjacent to existing public safety allocations if possible); Comments of the Office of the Hennepin County Sheriff at 8 (supports reallocating all or part of TV channels 68 and 69 to public safety); Comments of the City of Mesa, Arizona at 16-17 (recommends that the band between 174-192 MHz be reallocated to public safety and that 24 MHz from TV channels 60-69 be reallocated, among other things); Comments of the California Public Safety Radio Association at 3-4 (suggesting reallocation of UHF TV channels 60-69 or use of underutilized Department of Defense spectrum).

¹³ Comments of Motorola, filed November 22, 1996. *Sixth Further Notice of Proposed Rule Making*, MM Docket No. 87-268, released August 14, 1996.

C. The Commenters Agree that Adoption of the Comprehensive Set of Proposals Recommended in the PSWAC *Final Report* Is Essential

Finally, the opening comments reflect broad agreement with PSWAC's observation that allocation of additional spectrum -- standing alone -- will not satisfy current and future public safety communications needs. Rather, the spectrum allocation recommendations are integral elements of the comprehensive set of proposals contained in the PSWAC *Final Report*. In particular, the commenters generally agree that increased interoperability, greater federal/nonfederal sharing, improved spectrum management, and technological advances are additional essential elements to any effort aimed at increasing the effectiveness and efficiency of public safety communications. As discussed in detail in Motorola's opening comments, Motorola shares the view that expeditious implementation of the full scope of key recommendations contained in the PSWAC *Final Report* is imperative.¹⁴

In addition to PSWAC's specific recommendations, Motorola concurs with those commenters who urge the Commission to adopt a more open approach toward public safety agencies' requests for waiver to permit the use of non-public safety spectrum, such as common carrier spectrum at 470-512 MHz or even Federal government spectrum, on a case by case basis.¹⁵ Flexible regulatory policies, such as a liberal disposition toward legitimate, well-founded waiver requests, will serve the public interest by promoting PSWAC's recommendation that the FCC develop solutions "tailored to meet the unique needs of each Public Safety agency and the public they serve."¹⁶

¹⁴ See Comments of Motorola, Inc. at 10-12.

¹⁵ See Comments of APCO International at 19-20.

¹⁶ See Public Safety Wireless Advisory Committee, Final Report at 4 (Sept. 11, 1996).

II. THE RECORD DEMONSTRATES THAT PROJECT 25 WAS THE PRODUCT OF AN OPEN, INCLUSIVE PROCESS THAT HAS ALREADY STIMULATED NEW ENTRY INTO THE PROVISION OF PUBLIC SAFETY EQUIPMENT

In its opening comments, Motorola expressed its firm belief that efforts like the APCO/NASTD/FED Project 25 Standard ("Project 25 Standard") are precisely the type of voluntary, user-driven processes that will further enhance competition in the public safety equipment market.¹⁷ Motorola described in detail the procedures culminating in the Project 25 standard. Motorola also explained that the standard, which was developed through an open process, had already spurred new entry into the market for Project 25-compatible infrastructure and subscriber equipment, and had inspired renewed competition among existing participants.¹⁸ As detailed below, the opening comments reflect strong agreement with Motorola's assessment of the Project 25 process and its impact on the public safety communications marketplace.

A. The Comments Have Shown that Project 25 Was Driven By User Needs

At the outset, the opening comments demonstrate that Project 25 was a "user-driven"¹⁹ process responding to needs defined by the public safety community itself. The Project 25 Steering Committee, for example, notes that it believes "Project 25's record and the millions of dollars and thousands of hours spent by TIA members and public safety users to develop these

¹⁷ Comments of Motorola, Inc. at 14.

¹⁸ *Id.* at 14-23.

¹⁹ *See, e.g.,* Comments of the County of Orange, California at 2-3.

standards is indicative of the user community's involvement and commitment."²⁰ The Steering Committee further states it "remain[s] true to developing standards that fit the needs of the 'majority' of public safety users," and that the Phase I standards were based "on the users perspective of the '... service features and system requirements essential to the effective performance of public safety. . . .'"²¹ The Project 25 Steering Committee further states that "the core of our Project 25 voluntary standards is predicated on protecting the right and obligation of local public safety agencies to select the technologies and standards that best fit their needs, regardless of how it may or may not fit in a specific manufacturer's product line."²²

Precisely because Project 25 embodies users' needs, the user community has supported adoption of the Project 25 standard as a baseline digital standard for interoperability among participating public safety entities.²³ Indeed, public safety users have argued that adoption of the Project 25 standard is *essential* to public safety interoperability.²⁴ In effect, Project 25 represents a user community, on its own and without regulatory intervention, identifying problems and attempting to solve those problems without complex rulemakings. Thus, the record quite clearly

²⁰ Comments of the Project 25 Steering Committee at 7.

²¹ *Id.* at 20.

²² *Id.* at 27.

²³ See, e.g., Comments of the California Department of General Services, Telecommunications Division at 16, 22 ("[T]he Division strongly supports adoption of the . . . Project 25 Phase 1 standard as the designated mode of operation on the interoperability channels."); Comments of NASTD at 7 ("[T]he Project 25 Standards that [NASTD] helped develop have led the way in the quest for interoperability."); Comments of the County of Orange, California at 2-3; Comments of the California Public Safety Radio Association at 4-5; Comments of the Office of the Hennepin County Sheriff at 10; Comments of the Kansas Division of Emergency Management Committee on Wireless Communications for Public Safety Agencies at 2; Comments of the International Association of Chiefs of Police at 1; Comments of the Chicago Police Department at 1.

²⁴ See Comments of the California Department of General Services, Telecommunications Division, at 15-16; Comments of NASTD at 7; Comments of the County of Orange at 2-3.

demonstrates that Project 25 was created *by users for users* and is precisely the type of effort that the Commission should encourage.

B. The Comments Have Shown that Project 25 Has Already Stimulated New Entry Into the Manufacture of Public Safety Equipment

The record demonstrates that Project 25 has already stimulated new entry into the manufacture of communications equipment used by public safety entities. In particular, the record indicates that any concerns regarding the level of competition in the delivery of public safety communications equipment are unfounded, as is any fear that Project 25 may somehow impede competition among public safety equipment providers. Indeed, as opposed to apprehension about the level of competition in the public safety equipment marketplace,²⁵ several public safety users observed that the public safety equipment industry is competitive.²⁶

Public safety users also generally agree that the Project 25 standard was developed through an "open and fair" process.²⁷ As a result, the vast majority of commenters addressing the issue -- including public safety users and equipment manufacturers -- agree that the Project 25 standard will promote competition in the manufacture of public safety communications equipment.

²⁵ Notably, no purchasers (*i.e.*, the user community) have expressed any concerns regarding the effect of Project 25 on competition in the public safety communications equipment market.

²⁶ *See, e.g.*, Comments of the California Department of General Services, Telecommunications Division at 21; Comments of the Northern California Chapter of the Association of Public Safety Communications Officials at 22.

²⁷ Comments of California Department of General Services, Telecommunications Division at 16.

For example, the Northern California Chapter of the Association of Public Safety Officials-International, Inc., states that:

When it comes to the transition to digital technology extra steps are necessary to ensure the continuation of competition... Project 25 was created for this express purpose... In fact, without Project 25 there is a high probability that competition would exist only on the original purchase.²⁸

On this basis, the Northern California Chapter "respectfully requests the Commission to recognize the value of the Project and the fact that it will indeed promote competition, multi-source procurement, and ensure interoperability."²⁹

Similarly, Quantum Radionics Corporation ("QRC") "views standards such as Project 25 as stimulating competition and technological innovation in a traditionally conservative community."³⁰ Likewise, Transcript International ("Transcript") states that, "[t]he open standards established . . . by APCO 25 . . . allow multiple vendors to make competing products that are fully interoperable."³¹ Transcript goes on to explain that, "[h]ad it not been for . . . Project 25 standards, Transcript would not and could not have participated in the manufacture and sale of digital communications systems for public safety use."³²

²⁸ Comments of the Northern California Chapter of the Association of Public Safety Communications Officials at 22-23.

²⁹ *Id.* at 23.

³⁰ Comments of Quantum Radionics Corporation at 5.

³¹ Comments of Transcript International at 6.

³² *Id.*

Racal Communications, for its part, expresses a similar view:

The Project 25 open systems architecture permits any company with the technical capability to design and market equipment that will interoperate with any other equipment made by any other manufacturer. As a specific case in point, Racal has made the corporate decision to develop radio equipment compliant to the Project 25 standards. In reaching this decision, we carefully studied both the market and the standards and determined that there were no significant barriers to our entering the market and competing for business. We have determined that all essential Intellectual Property Rights are readily licensable on a fair and reasonable basis.³³

Relatedly, the Association of Public Safety Communications Officials International, Inc. ("APCO International") further notes that:

Voluntary, user-driven, interoperability standards efforts such as Project 25 promote competition in the public safety equipment market. Such standards allow agencies to select equipment from multiple vendors without sacrificing equipment compatibility or interoperability with other jurisdictions.³⁴

These excerpts demonstrate that competing manufacturers as well as the users believe that Project 25 has already had a significant, positive impact on the level of competition in the public safety communications marketplace.³⁵

³³ Comments of Racal Communications at 3.

³⁴ Comments of APCO International at ii. *See also* Comments of E.F. Johnson Company at 4.

³⁵ *See also* Comments of ADI Ltd. at 2 ("The users' expectations for multiple sources of interoperable equipment are realisable now with several public demonstrations of interoperability over the past 12 months."); Comments of the Kansas Division of Emergency Management Committee on Wireless Communications for Public Safety Agencies at 4 ("The statement . . . about Project 25 limiting competition is backwards to reality."); Comments of Digital Voice Systems, Inc. at 1 ("There are already several vendors . . . producing standard Project 25 digital radios, and the system has been proven in the field.").

As discussed in Motorola's opening comments, the Project 25 standard is not proprietary; rather, to ensure that the market remains competitive, Project 25 requires participating vendors that hold intellectual property rights ("IPR") essential to the standard to license those rights to other participating manufacturers under fair and reasonable terms and conditions.³⁶ Significantly, the record also reflects that the IPR for Project 25 is, in fact, being licensed to interested manufacturers on fair and reasonable terms.³⁷ To this end, at least seven companies -- E.F. Johnson, Motorola, Daniel's Electronics, BK Radio, Garmin International, ADI Limited (formerly Stanilite), and Transcript International -- have executed license agreements to produce Project 25-compatible equipment.³⁸ Many of these companies are new to the public safety market and credit their entry to the existence of Project 25.³⁹

³⁶ Comments of Motorola, Inc. at 20; *see also* Comments of APCO International at 28-29; Comments of the Project 25 Steering Committee at 9; Comments of the Telecommunications Industry Association, Mobile and Personal Communications Division at 11-12.

³⁷ *See, e.g.*, Comments of John S. Powell at 25-26 (discussing the fact that existence of the Project 25 standard facilitated the entry of Garmin International into the public safety market). *See also* Comments of APCO International at 28-29; Comments of Racal Communications at 3.

³⁸ Comments of APCO International at 29.

³⁹ *Id.* *See also* Comments of John S. Powell at 25; Comments of Racal Communications at 3; Comments of Transcript International at 6. In its comments, E.F. Johnson notes that:

Since the beginning of the Project 25 effort, several unexpected radio manufacturers have surfaced as active participants. . . . [A]ll of these manufacturers have signed Intellectual Property Right (IPR) agreements as needed to secure access to proprietary information. A Memorandum of Understanding that assures reasonable and non-discriminatory access to IPRs for Project 25 has also been executed among all of the manufacturers involved in the process, including Ericsson, Maxon, Standard and others. Competition is being enhanced and the barriers to entry have been lowered by the development of technology standardization.

Comments of E.F. Johnson Company at 4.

C. Motorola Supports the Position of APCO International and Other User Groups on the Inapplicability of Section 273 To Future Public Safety Standards Efforts

The suite of Project 25 standards represents voluntary, cooperative industry action at its best. Without resort to -- or impetus from -- the FCC, a user community came together, identified common problems, and, through an open and inclusive process spanning several industries, defined a practical, beneficial, and pro-competitive solution. The Project 25 standards were undertaken without requiring the expenditure of time and resources by the FCC in rulemaking proceedings, are voluntary and do not rely on the FCC for continued enforcement, do not involve the addition of new sections of technical rules to the Code of Federal Regulations, and serve as a flexible framework achieving vast public benefits. The FCC should be encouraging such efforts -- it should not burden the users with additional layers of regulatory oversight and the application of a statute that was designed for a non-relevant scenario.

For this reason, Motorola and other commenters have supported the Commission's preliminary determination that Section 273(d)(4) of the Communications Act is not applicable to organizations developing standards for public safety wireless communications equipment.⁴⁰ Initially, as suggested by the California Department of General Services, Section 273(d)(4), by its terms, is not applicable to public safety equipment.⁴¹ Rather, as argued by TIA, "as a statutory matter, [Section 273] was not intended by Congress to cover Public Safety wireless equipment," but instead to the rather different circumstances of non-accredited standard-setting organizations

⁴⁰ See Comments of Motorola, Inc. at 12.

⁴¹ See Comments of the California Department of General Services, Telecommunications Division at 23.

owned by the Regional Bell Operating Companies.⁴² Thus, "in light of Congress' obvious intent to create a very specific piece of legislation with a very narrow focus, . . . it [is] a difficult stretch of logic for . . . the Commission to attempt to apply the same standards management process to non-public service carriers."⁴³

As noted by the County of Orange, California, "the key to the success of a standards-setting organization for Public Safety wireless communications equipment" does not lie in accreditation, "but in an open and fair process which assures that the standards produced truly reflect the needs of the Public Safety users which the standards purport to represent."⁴⁴ Yet, as observed by the Project 25 Steering Committee, "it does not necessarily follow that to have a 'fair and open' standards process we need more Federal government control and intervention."⁴⁵ As noted above, the commenters discussing the issue agree that the Project 25 process has been an "extremely fair and open process, with equal opportunities for participation by all manufacturers, users, and other interested parties."⁴⁶

As a final matter, Motorola also concurs with those commenters who suggest that it is neither necessary nor desirable for the Commission to establish specific standards-setting guidelines for public safety entities if the agency does not intend to adopt or extend official recognition to the standard in question.⁴⁷ Absent a desire to promulgate an official standard, the Commission has no reason for attempting to regulate a voluntary, user-driven standard, such as the

⁴² See Comments of TIA at 5-6.

⁴³ Comments of the Project 25 Steering Committee at 26.

⁴⁴ Additional Comments of the County of Orange, California at 2.

⁴⁵ Comments of Project 25 Steering Committee at 27.

⁴⁶ See, e.g., Comments of APCO International at 31; Comments of the County of Orange, California at 2; Comments of Transcript International at 5-6; Comments of E.F. Johnson Company at 3.

⁴⁷ See Comments of APCO International at ii.

Project 25 standard, which is the product of a voluntary consensus developed by the public safety industry. As Motorola has argued, the Commission should affirmatively encourage voluntary, cooperative resolution of common industry concerns instead of constraining the flexibility of such consensus-based processes.

III. MOTOROLA URGES THE COMMISSION TO CONTINUE ITS POLICIES PROMOTING EFFICIENT USE OF SPECTRUM IN PUBLIC SAFETY ALLOCATIONS

Noting that public safety users "are not subject to the same marketplace forces . . . associated with commercial users," Ericsson urges the Commission to adopt a "carrot" and "stick" approach to "encourage the use of more spectrally-efficient technology."⁴⁸ Specifically, Ericsson argues the Commission should: (i) mandate 6.25 kHz voice channel equivalence for new equipment by 1999, and (ii) encourage deployment of trunked systems by, among other things, relegating non-trunked users to secondary status.⁴⁹

Ericsson's advocacy of a 6.25 kHz voice channel equivalency by 1999 runs directly contrary to the Commission's spectrum use decisions in the recent *Refarming* proceeding.⁵⁰ In that proceeding, the Commission carefully and painstakingly balanced existing private radio

⁴⁸ Comments of Ericsson, Inc. at 25-27.

⁴⁹ *Id.* at 30-31. Ericsson also proposes to impose federal supervision of local procurement decisions based on its model of optimum spectral efficiency by requiring public safety users to "justify" any equipment purchases that are not the best available spectral efficiency. *Id.* at 33. Quite aside from the difficulty inherent in measuring "spectral efficiency," Motorola strongly opposes this proposal as an unwarranted intrusion into local system design. By elevating its version of spectrum efficiency to a single, controlling factor in new system purchase decisions, Ericsson's approach ignores the fact, which Ericsson itself documents, that public safety agencies have greatly varying needs and functional requirements. *See id.* at 20. The controlling element of purchasing decisions must be whether or not the equipment meets the specific needs and budget of the user.

⁵⁰ Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, 10 FCC Rcd 10076 (1995).

investments in infrastructure, anticipated technological progress, and spectrum efficiency concerns.⁵¹ Ultimately, the Commission declined to impose a date certain for *users* to transition to 6.25 kHz equipment. Instead, the Commission determined that manufacturers of private radio equipment must transition to 12.5 kHz voice channel equivalents to obtain equipment type approval after August 1, 1996, and to 6.25 kHz voice channel equivalents to obtain equipment type approval by the year 2005.⁵² Notably, this decision applied to equipment for *all* private radio services, including services used by commercial entities in furtherance of profit-oriented enterprises. Ericsson would now impose a 6.25 kHz efficiency mandate on already overburdened, taxpayer-supported local, state, and Federal agencies 6 full years before such efforts are even contemplated for commercial companies.⁵³

Ericsson has provided no new justification or support for a 6.25 kHz voice channel equivalence mandate that has not already been considered -- and rejected -- in the *Refarming* proceeding. Instead of creating expensive, premature, and impractical efficiency mandates, however, Motorola believes the Commission should use the PSWAC process as a starting point for more careful monitoring of public safety spectrum usage and needs.

In the name of spectrum efficiency, Ericsson also suggests "incentives" to promote the use of trunking technology. In particular, Ericsson suggests granting trunked users channel exclusivity, effectively relegating non-trunked users to secondary status. Motorola opposes this suggestion for three principal reasons:

⁵¹ *Id.* at 10077-79, 10096-10100.

⁵² *Id.* at 10098-10101. Multi-mode equipment that operates on 25 kHz and/or 12.5 kHz will be allowed if it is also capable of operating on 12.5 kHz or narrower channels (and on 6.25 kHz or narrower channels after 2005).

⁵³ *See* Comments of Ericsson, Inc. at 26.

- Trunked systems, as noted by a number of public safety users, are not a technological panacea.⁵⁴ Indeed, even Ericsson concedes that public safety users have widely varying needs.⁵⁵ In some cases, trunked systems may provide a solution to those needs. In other cases, however, trunked systems may not offer the features and functionality deemed critical by a public safety agency. Creating regulatory incentives heavily favoring trunking constitutes precisely the type of "one-size fits all" doctrinism Ericsson itself purports to oppose.⁵⁶ Local public service entities, in particular, have requested flexibility to choose among available technologies, stating, for example, that they "support a regulatory approach that allows the user to select the technology that best serves its particular system and situation."⁵⁷
- Trunked systems are not necessarily "more efficient." As observed by Quantum Radionics Corporation ("QRC"), numerous statements that have been made "concerning the efficacy and alleged benefits of trunking technology . . . are not correct unless very limited factual assumptions are in effect."⁵⁸ QRC further notes: "trunked systems never can achieve the capacity, per channel or per trunk, as a non-trunked channel. . . . What a properly designed trunked system does provide is an automatic balancing or leveling of user load, which can also be accomplished for far less cost by properly designing, sizing, and implementing a conventional non-trunked system."⁵⁹ Thus, creating incentives to implement trunked systems may, in fact, have a detrimental effect on spectrum efficiency.
- In comparison to the flexibility inherent under the shared channel paradigm, exclusive channel grants can be an inefficient use of spectrum. Specifically, the concept of exclusivity amounts to the guarantee that, independent of whether a channel is in use, operation on that channel is denied to all others. Because shared, coordinated frequency use has the potential, where justified, to accommodate various users' needs, channel exclusivity cannot be advocated as a spectrum efficiency measure.

⁵⁴ See, e.g., Comments of the County of Orange, California at 2; Comments of the International Municipal Signal Association and the International Association of Fire Chiefs, Inc. ("IMSA/IAFC") at 16; Comments of the County of Los Angeles at 4; Comments of the New York City Transit Authority at 9-10; Comments of the City of Fort Worth, Texas at 7.

⁵⁵ Comments of Ericsson at 20.

⁵⁶ *Id.* at 25.

⁵⁷ Comments of the City of Fort Worth, Texas at 8. See also Comments of IMSA/IAFC at 19; Comments of the American Association of State Highway and Transportation Officials at 12; Comments of the County of Prince William at 4.

⁵⁸ Comments of Quantum Radionics Corporation at 13.

⁵⁹ *Id.* at 14.

Motorola believes, as do the commenting users, that choice of technology, including trunked versus non-trunked operation, is a matter for local agencies to decide. Motorola does not believe that the purported spectral efficiency benefits of trunked systems warrant Commission policies distorting local agencies' technology selection processes. In fact, the record demonstrates that when public safety user demographic factors are considered in the spectral efficiency analysis, trunked systems may have only marginally beneficial -- and in some cases even detrimental -- consequences on efficiency when compared to conventional systems. Under the circumstances, there is no justification for regulatory policies that deprive public safety agencies from making technology and system selection choices based on their functional requirements and budgets, an area where local authorities should have unrestricted autonomy.

IV. CONCLUSION

The record demonstrates that implementation of the spectrum allocation and interoperability recommendations set forth in the PSWAC *Final Report* is essential in order for the public safety community to discharge effectively its mission of protecting public health and property. The record also reflects widespread support for the Project 25 standard as the mechanism to facilitate

interoperability among public safety entities and as a means for spurring competition in the public safety communications equipment marketplace. In light of the strong support for PSWAC's direction, Motorola reiterates its request that the Commission implement PSWAC's recommendations on these crucial issues without delay.

Respectfully submitted,

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